



## **MK802 IVLE** User Manual



## Welcome!

Thanks for purchasing one of the most cutting edge mini computing devices available today, the MK802IV LE.

The MK802IV LE is a powerful quad core Linux mini computer which runs a version of Ubuntu Linux called Picuntu, this is a specially designed desktop OS for devices with ARM processors. If you are familiar with Linux you should have no problem setting it up and using the device. If you are new to Linux then this device is a great platform for learning about Linux on ARM architecture and exploring the many possibilities it brings to modern computing. This user manual takes you through the basics of setting up the device for the first time and basic usage.

Please note this product is intended for early adopters of ARM Linux platforms and developers, many of the features are still under development so certain things might not behave as expected! This device does not support full hardware accelerated video playback, however up to 720p video playback is possible due to the high performance CPU cores which allow software decoding and playback. Development is happening on a daily basis and we openly invite users to get on board to help with improving this affordable, open source computer platform. Please join our forum at <http://www.rikomagic.co.uk/forum> to keep updated on the latest developments.

# Declaration

- This user manual includes all the information of safe and correct operation instruction. To avoid accident and product damage, please be sure to study this manual carefully before using the product.
- Please keep the device away from high temperature, humid and dusty environments.
- Do not drop or subject the device to extreme shock.
- Do not remove power from the device when it is formatting, or upgrading, otherwise it will likely cause errors or damage to the internal disk.
- Do not dismantle the device. Do not clean it with alcohol, thinners or Benzene.
- We reserve the right to upgrade and modify the product.
- Disclaimer: We only take responsibility to provide Warranty and after service. Users are responsible for their own data stored on the device. We cannot be held responsible for any data loss.
- The product is not waterproof.
- All the pictures in the instruction are provided for reference and may differ slightly in actual use.

## 1. Connectors



Micro-USB Power: Connect with TV USB/Mains PSU to power the device.

USB 2.0 HOST: Connect to other USB devices. (Keyboard, Mouse etc)

USB OTG: Data transfer/recovery with PC, or connect to other USB device.

HDMI: High Definition Multimedia Interface Output

Micro SD: Supports 2GB-32GB Micro SD/TF card

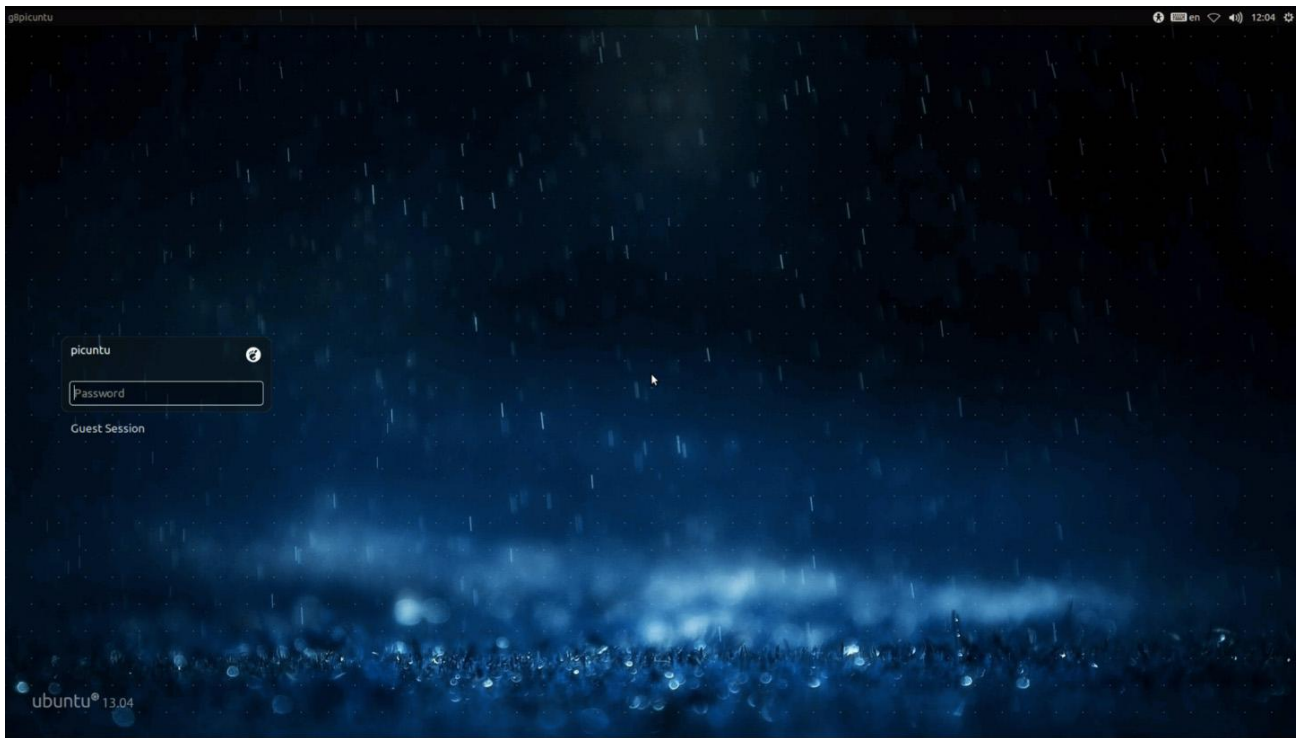
## 2. Device connection Instruction

- a) Take out the device insert into your TV HDMI port(if there is no enough space around HDMI interface for MK802IV, please use the HDMI extension cable), make sure the source is set to a HDMI input mode.(Refer to TV/Monitor user manual).
- b) Power supply connection: Take out Micro USB cable to USB cable and connect the MK802IV with the TV's USB port via this cable; If the TV USB port is unable to provide

enough current, please use the USB power supply. (Any USB power supply that can provide 5V/1A to 5V/2A can be used).

- c) All USB Keyboards and Mice can be used however for convenience sake we recommend using a 2.4Ghz wireless keyboard and mouse. Plug the 2.4Ghz receiver into the USB Host connector. The MK802IV will recognize the input device and it will start working immediately.

### 3. Using the MK802IV LE



Your MK802IV LE comes with Ubuntu Linux OS (Picuntu 4.5) preinstalled, this is an advanced desktop OS that is very similar to the version you will find on conventional Linux PC's.

After powering on you will see some scrolling text which shows the boot process. Please wait, after about 40 seconds the Ubuntu Login Screen will appear.

The User "Picuntu" is selected, now enter the password: 12qwaszx

After a few seconds the Ubuntu desktop will appear.

## 3.1 The Desktop

The Ubuntu desktop is a flexible working environment that can be heavily customized to suite your needs. This section will explain the basics and focus on getting started, for full documentation you should visit the official Ubuntu website. <http://www.ubuntu.com>



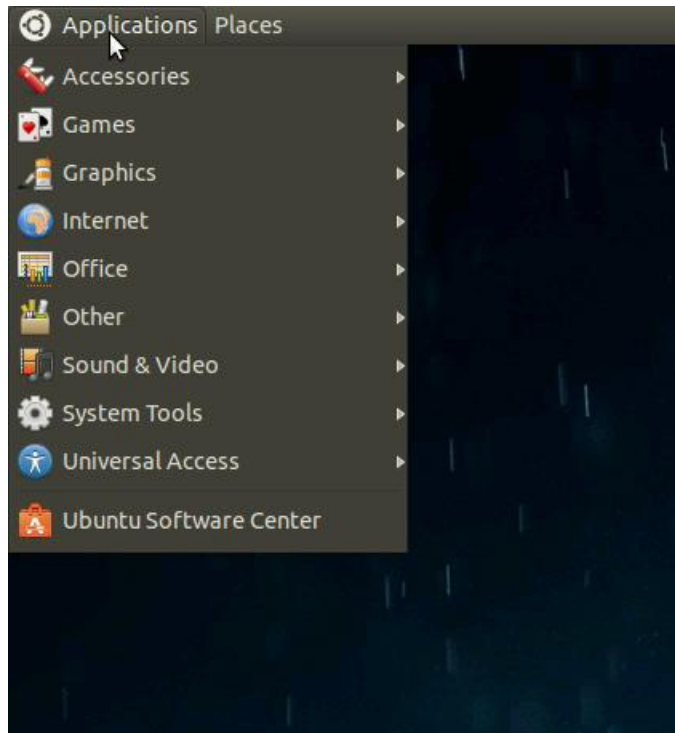
## 3.2 The Status Bar



The status bar at the top of the screen shows various menus and status icons. On the right hand side of the bar you will find Network (Wireless) panel, Sound, Clock and User settings.

## 3.3 The Applications Menu

The Applications menu is situated on the left hand side of the bar. When you click on the menu a list of the installed applications will be revealed.



## 3.4 Changing the password

Please change this password at the earliest opportunity (for security reasons) you can do this from the desktop by going to the top menu: Applications > Accessories > Terminal

In the terminal type: **passwd**

Hit enter and then type the default password when prompted

Then enter your new password, you will be prompted to enter this twice.

Setting the root password

In the terminal type: **sudo -i**

Then type: **passwd**

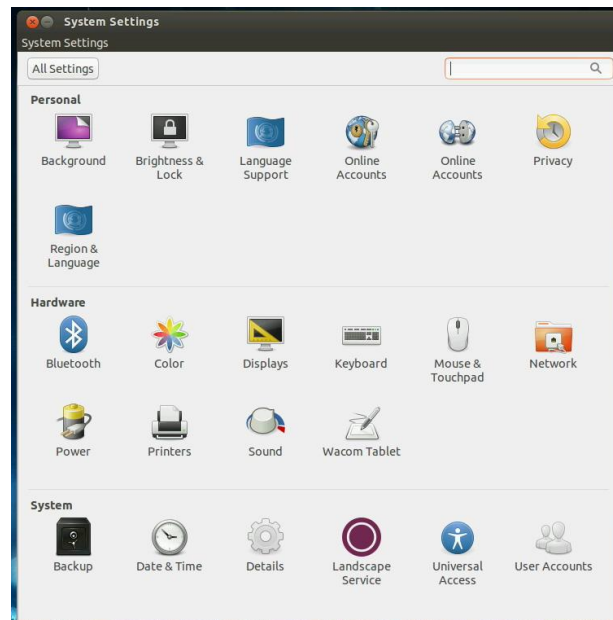
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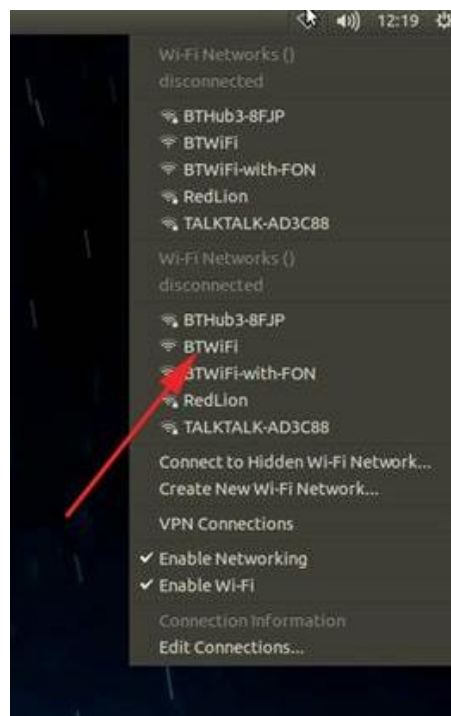
## 4. System Settings Panel

The settings panel is accessed from the Applications menu: Applications > System

Tools > System Settings. There are many different settings, for detailed documentation please see the official Ubuntu website: <http://www.ubuntu.com>



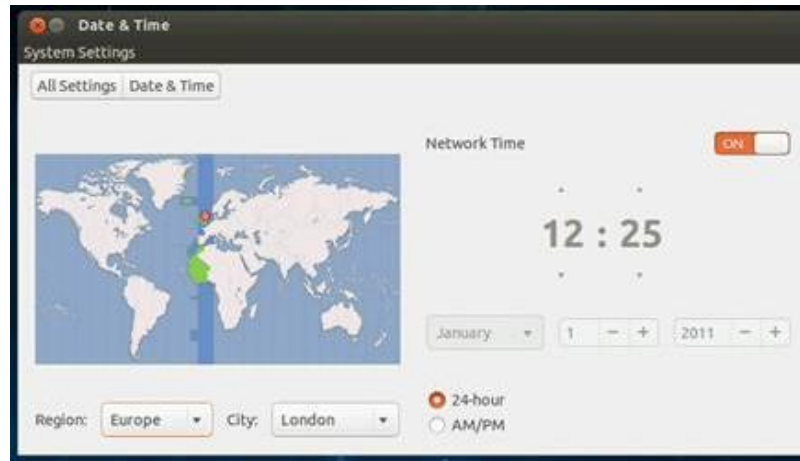
## 4.1 WIFI Settings



To get connected to your wireless network click on the WIFI icon on the status bar  
A list will appear showing the available WIFI networks, select yours from the list and then enter your network password.  
If you see two wireless interfaces like the picture above please select your network from the lower list as indicated by the red arrow.



## 4.2 Timezone

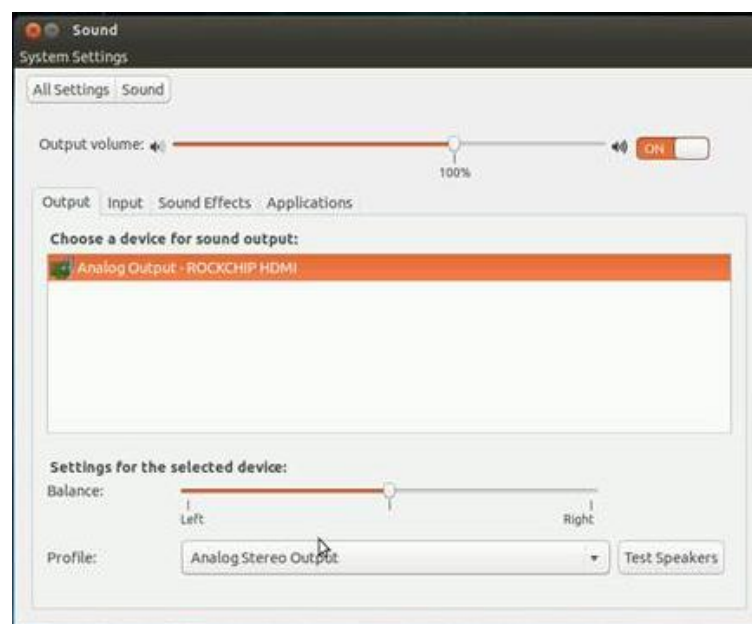


The OS is configured to automatically set the time using Internet Network services, however the Timezone may not be correct. To set the correct timezone, from the System Settings panel select Time and Date  
Then select your timezone.

## 4.3 Language

The Language of the system can be set by opening the System Settings Panel and selecting Region & Language or Language Support

## 4.4 Sound

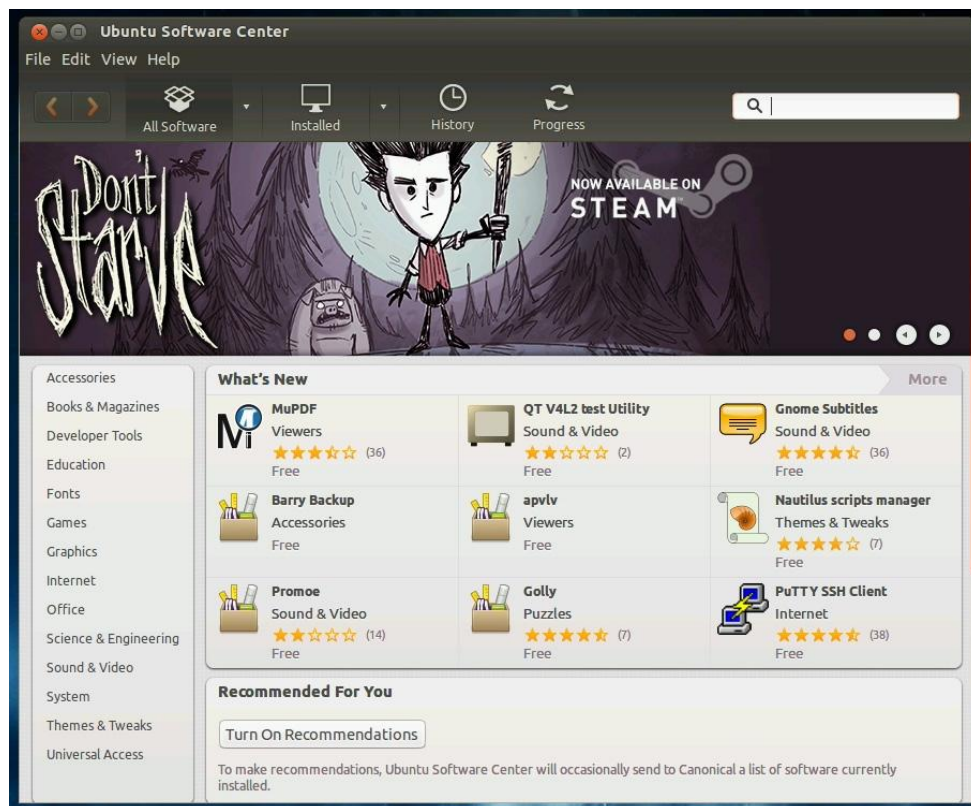


The Sound is preconfigured to send sound to the HDMI output (TV Speakers) make sure the sound is turned up on the TV/Display. You can also use standard USB sound output devices to allow use with headphones or other playback devices. To access the sound settings from the System Settings panel select Sound.

## 5. Applications

There are many applications preinstalled on the device, however to keep the firmware size down we have only included the essential applications for basic operation. It is easy to download applications using the Ubuntu Software Center or the apt-get command from the terminal.

### 5.1 Software Center



The Ubuntu software center is an easy way to download applications that will work on devices running the Ubuntu OS.

It can be accessed from the applications menu at: Applications > Ubuntu Software Center

Please note it is important to realise that whilst many applications will run perfectly on the MK802IV LE some applications wont work due to compatibility issues.

You can search for applications by category or using the search box on the top right of the software center.

A few excellent applications include:

Libre office – Leading Desktop Publishing Suite

Gimp – Image manipulation software

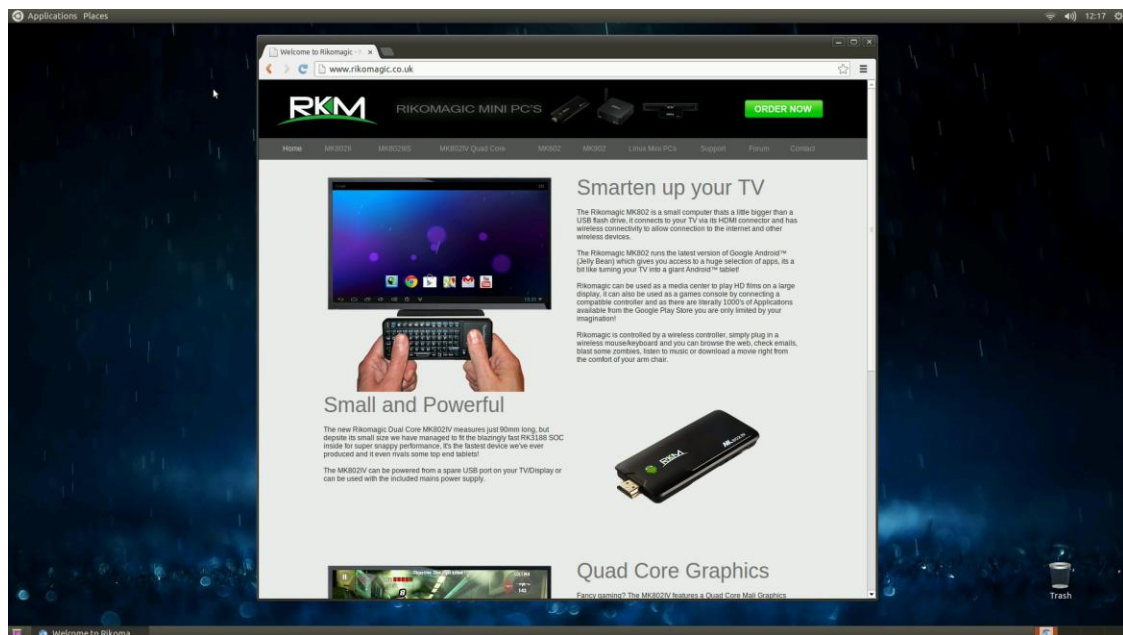
LMMS – Music Production Software

## 5.2 Web Browsing

Chromium Browser is included in the Applications list and can be accessed at:

Applications > Internet > Chromium Web Browser

This is a powerful, fast and secure web browser that works very well on the MK802IVLE.



## 6. Troubleshooting

Problem: Screen flickers or is unstable.

Solution: Please check if the HDMI cable has been connected tightly.

Problem: WiFi wont connect.

Solution: Restart Mini PC and try again, move device closer to wireless router, Erase all preconfigured wireless networks and reboot.

Problem: System keeps restarting automatically:

Solution: please check if the device is getting enough power. Some TV's USB ports do not provide enough power for the device to function correctly. You should try using the included USB mains power supply.

Also if an external HDD is connected this can cause excessive power drain. Please plug the additional power supply for external HDD or use a powered USB hub.

Problem: Cannot start device.

Solution: Please download the FW Recovery file from the Rikomagic official website: [www.rikomagic.com](http://www.rikomagic.com) to refresh the device FW. Make sure any important data has been backed up before you proceed with the recovery. If the issue cannot be solved by performing a recovery then please contact the distributor which you bought the device from and they will be able to advise the next steps to take.

## 7. System Recovery/Update

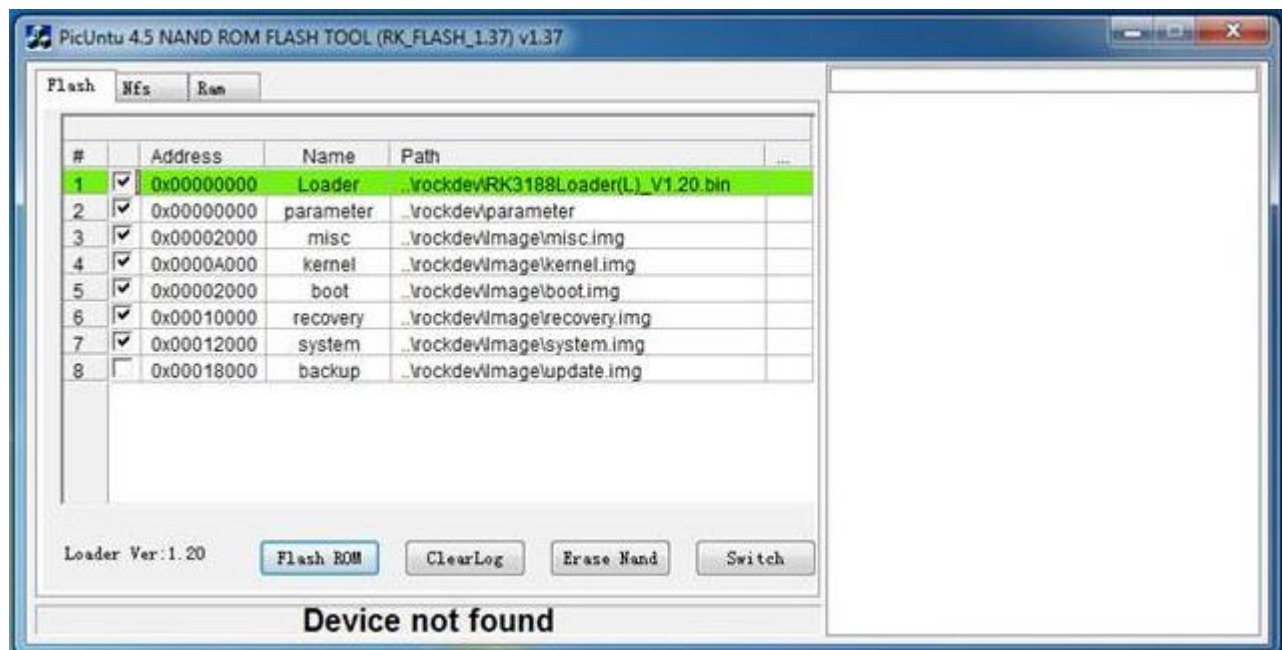
There may come a time when you need to recover the original firmware supplied on the device from the factory or install new firmware in the case that there is an update. Given the experimental nature of these mini ARM computers we have tried to make it as easy as possible to perform a firmware recovery/installation.

### 7.1 Recovery/update on Windows XP/Windows 7 System

First download the recovery package from the official website:

<http://www.rikomagic.co.uk/support.html>

Decompress the ZIP file and open the RKAndroidTool software located in the rk\_flash\_1.37 folder.



## Connect the mini pc with computer.

1. Prepare a USB cable (Micro USB to USB cable); insert the normal USB port to computer usb host.
2. Prepare a paperclip; press the recovery button as shown below.



3. Don't release the paperclip, at same time, insert the micro USB port to the unit USB OTG port, after 3-5s, release the recovery button.

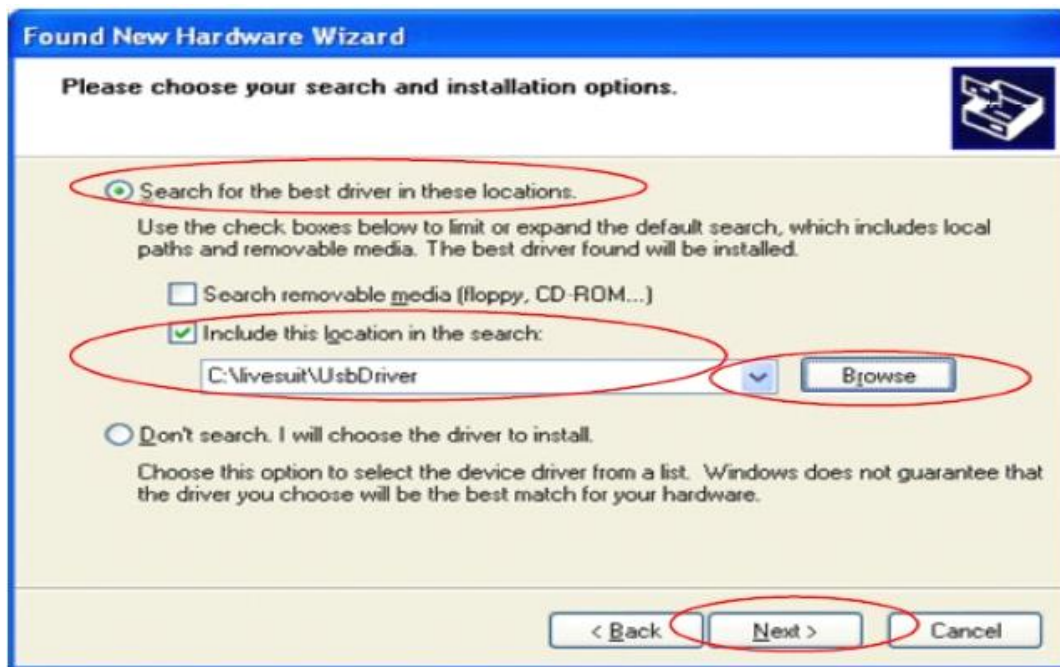
## USB driver installation - Windows XP

A window will pop up prompting you to install the drivers.

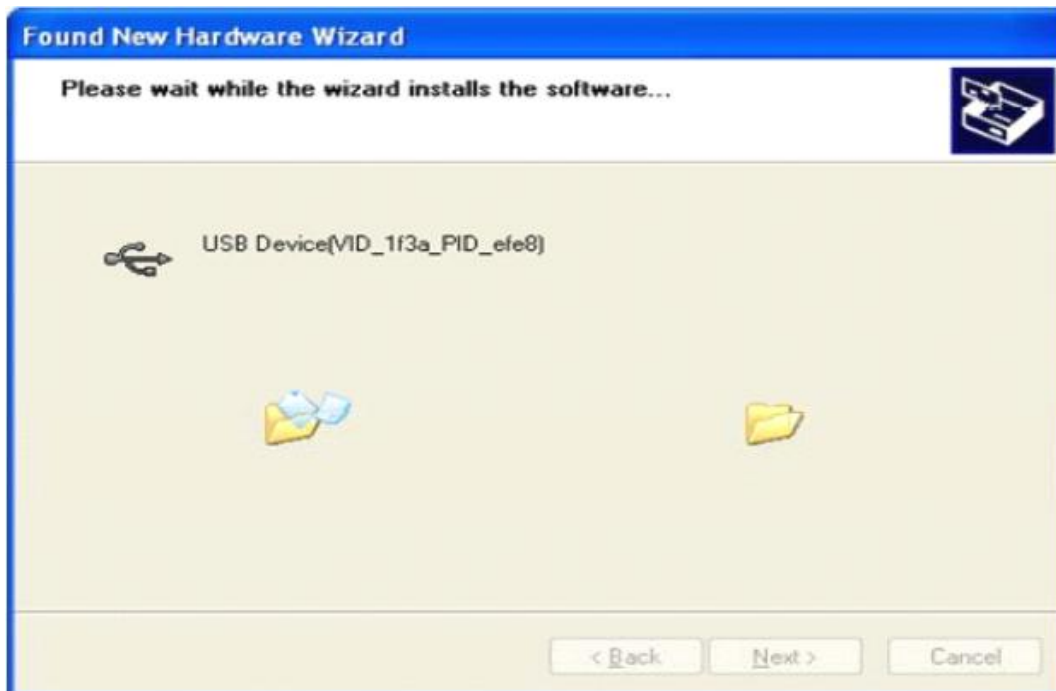


Select "Next"





Choose the options as indicated in the picture, and browse to the folder /driver/driver/x86/xp in the recovery software folder. Click “Next” to install



When the installation is finished, a window will appear, click “finish”

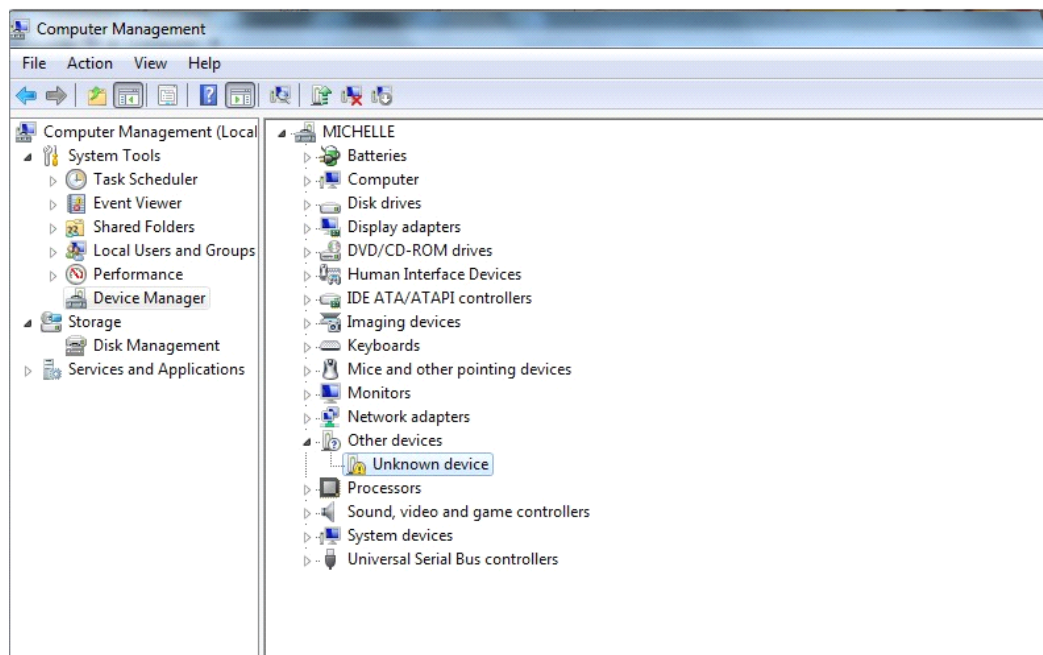


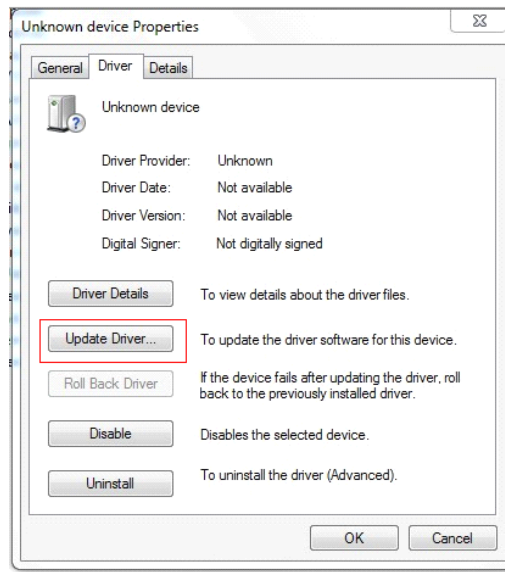
## USB driver installation - Windows 7

After connecting the Mini PC to the computer whilst holding the recovery button down, open device manager

Normally this can be opened by right clicking on the My Computer icon.

Find the Unknown device as shown in the picture:



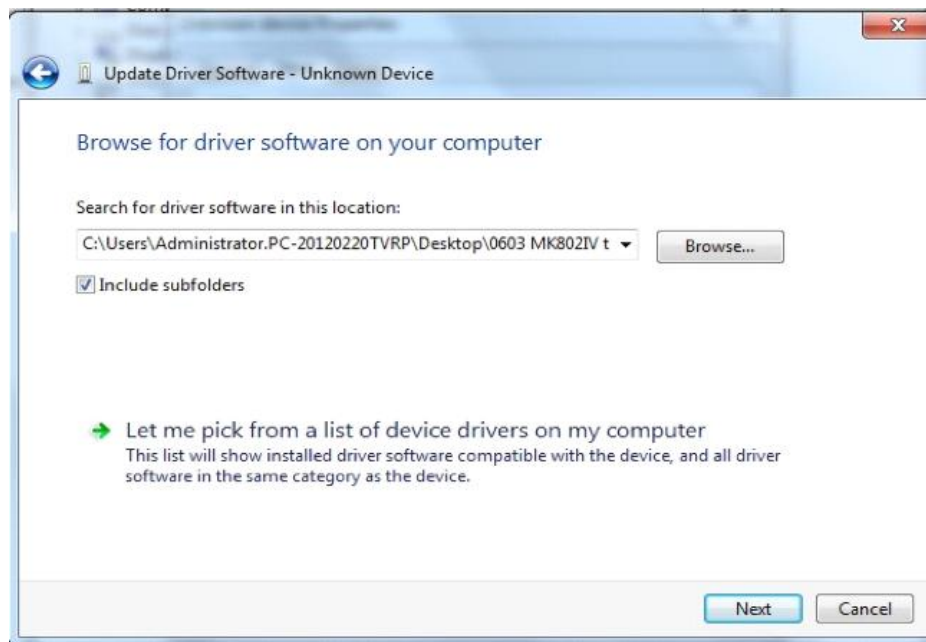


Double click on unknown device.

Press update driver, then browse to the folder /driver/driver/ and select the appropriate driver corresponding to your system.

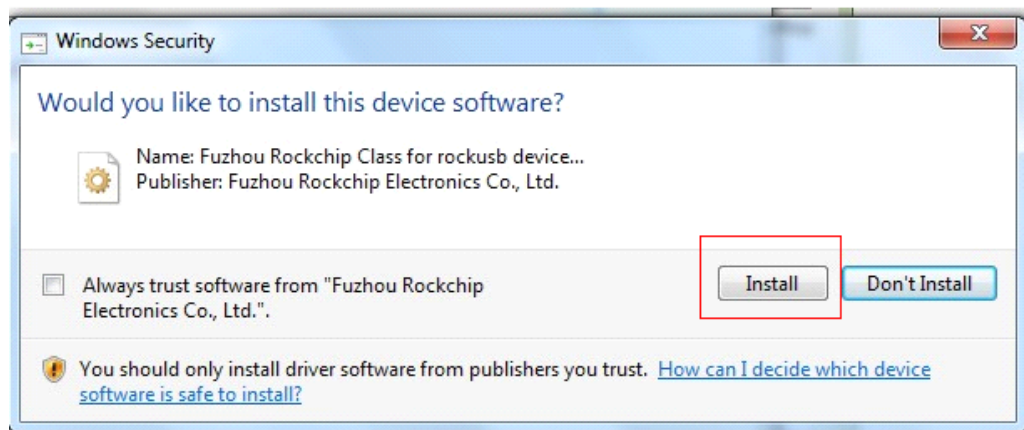
If your computer is WIN7 32bit then select /x86/win7

If your computer is WIN7 64bit then select /x64/win7

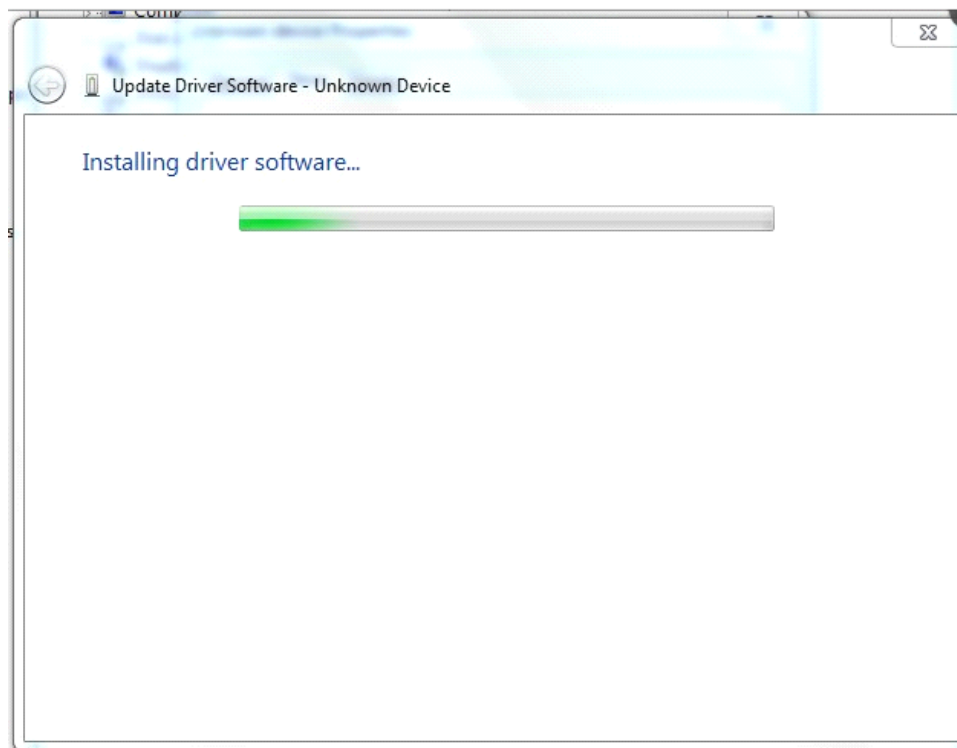


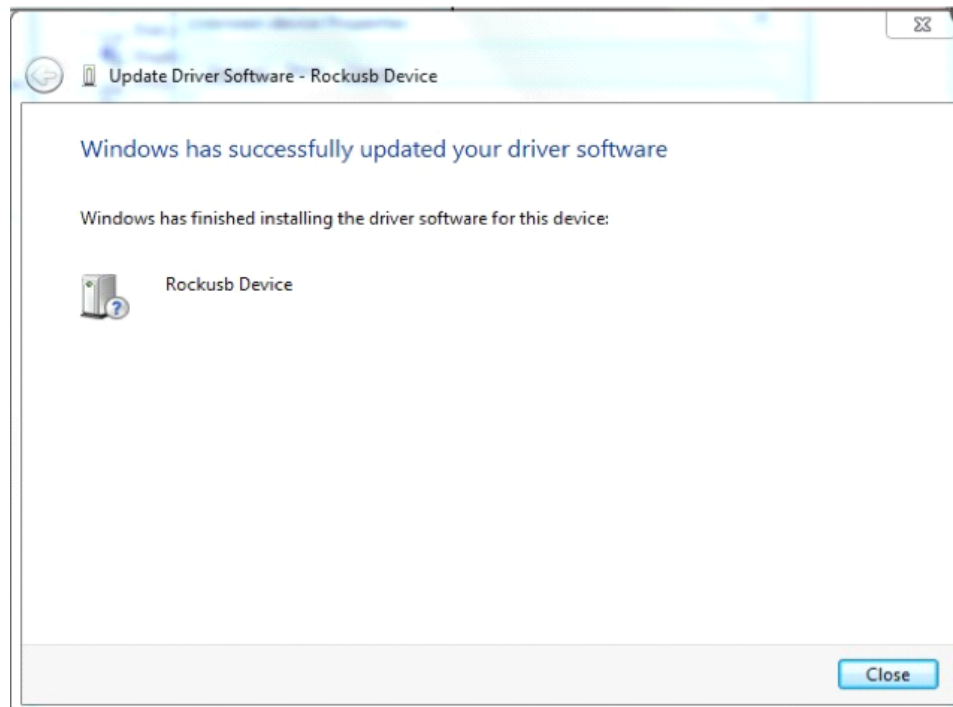
press "next" and the following window will open





Press "Install" and wait for installation to complete.



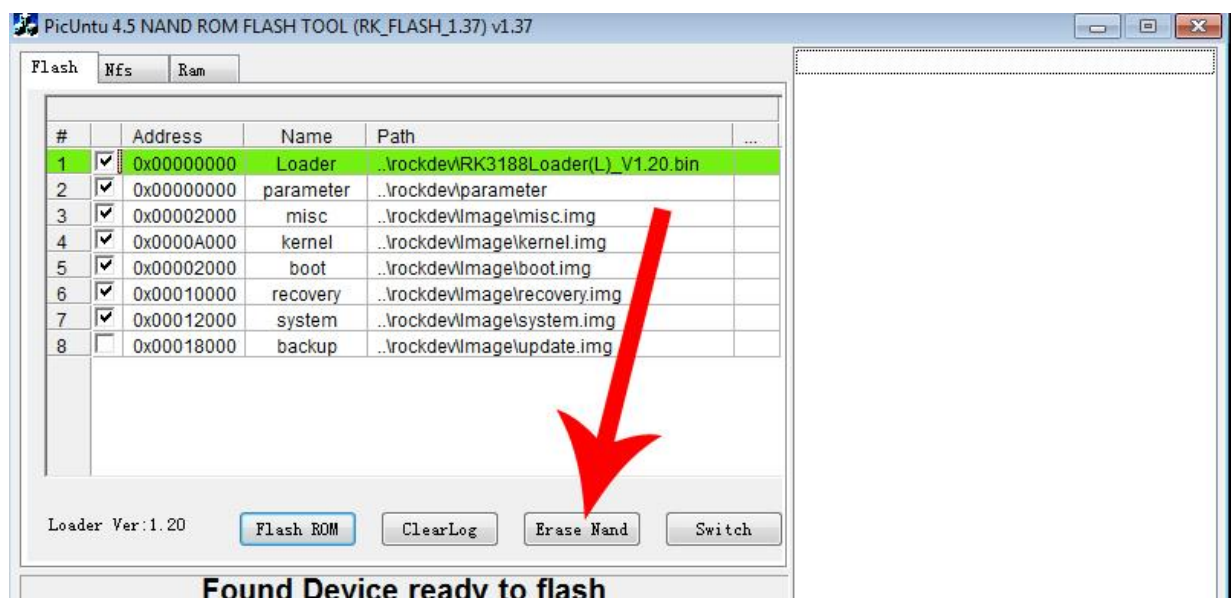


The above will appear when the driver is installed correctly. Press Close.

## Installing the Firmware

Go back to the RKAndroidTool Software, you should see the message “Found Device ready to flash” in the bottom panel of the software.

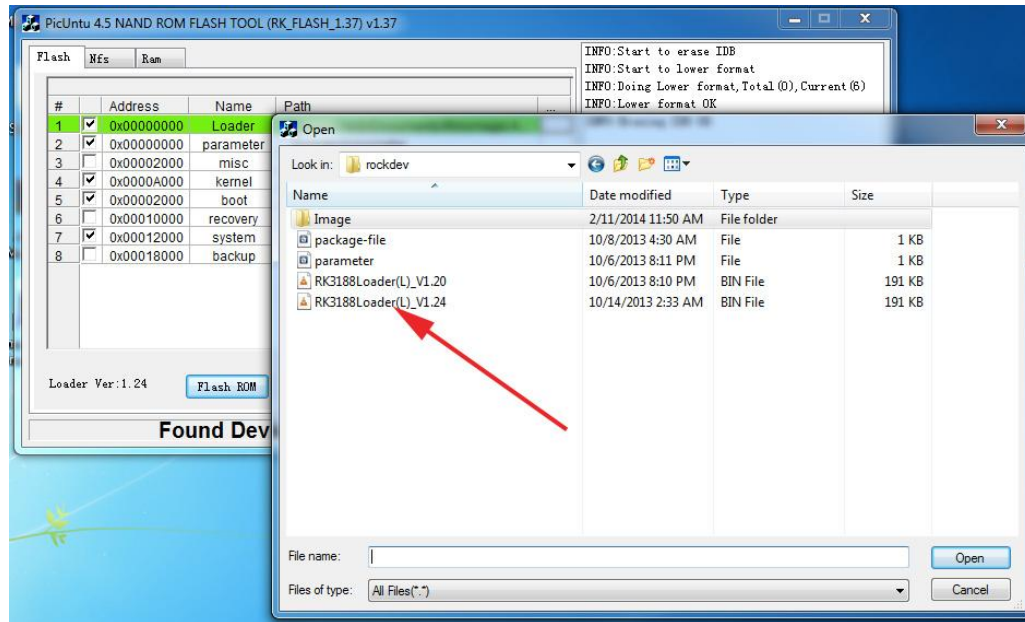
If you do not see this message then try reconnecting the device to the PC again whilst using the paperclip to hold down the recovery button.



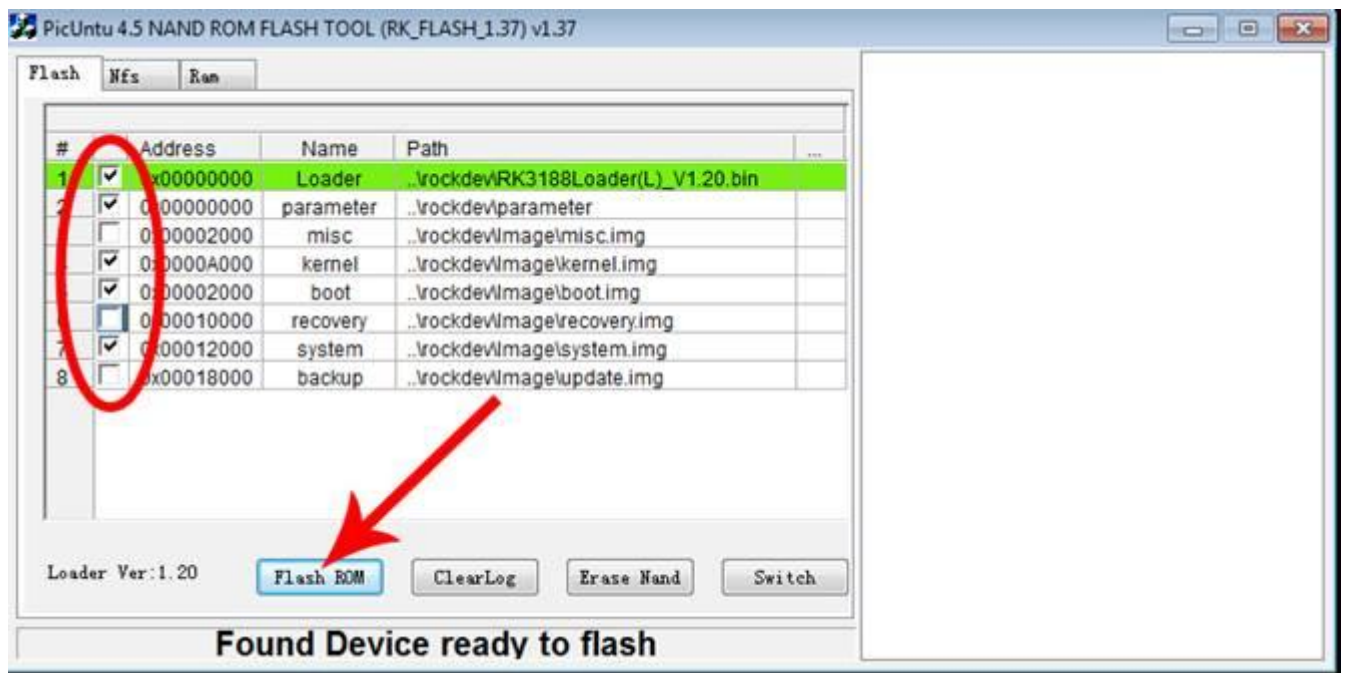
Click on the “Erase Nand” button and wait for the erase process to complete.

Uncheck the boxes; Misc, Recovery and Backup.

Change boot loader file to version 1.24, Navigate to the folder /rockdev which contains the Bootloader files



Click on "Flash ROM"



The Flash process takes approximately 10 Minutes to complete.

After the process is complete, disconnect the device from the PC, connect to a TV/Display and power up the device.

Please note that the first boot will take longer than normal as the system partition is resized to fill the internal Flash NAND. On first boot we recommend leaving the device 5 minutes before logging in to the desktop. This will allow the initial processes to complete.

## 8. Specifications

Model	MK802IV LE
CPU	RockChip 3188 Quad Core, 28nm
GPU	Mali-400 MP4 @ 533MHz
OS	Linux, Ubuntu 13.04 (Picuntu 4.5)
CPU Type	Cortex-A9, Up to 1.8GHz
RAM	2GB DDR3
Memory	8GB / 16GB Options
Expansion	Micro SD / Micro TF card
WiFi	802.11 b/g/n
Ports	HDMI (Male), Micro SD Slot, 1 x Full Size USB Host, 1 x Micro USB OTG, 1 x USB Power Port.
Accessory	HDMI extension cable, Micro USB - Standard USB lead, Micro USB Adapter, Manual, USB Mains Power Supply

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